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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

MAR 18 1996

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

Telecommunications Services)
Inside Wiring)

Customer Premises Equipment)

CS Docket No. 95-184

DOCKET FILE COPY ORIGINAL

COMMENTS OF U S WEST, INC.

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March 18, 1996

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COMMENTS OF U S WEST, INC.

U S WEST, Inc. ("U S WEST"), through counsel and pursuant to the Federal Communications Commission's ("Commission") Notice of Proposed Rulemaking,¹ hereby files its comments in the above-captioned proceeding. As noted by the Commission in its NPRM, the clear distinction between the technologies and services of cable and telephone companies has been significantly eroded. No longer is telephony limited to delivery over twisted-pair copper wiring ("twisted pair"), no more so than video is limited to delivery via coaxial ("coax") cable. Advancements in technology have provided the capability to use multiple delivery systems for both telephony and video programming. As technology is not wont to stand still, the future is surely to provide companies with other, even more advanced delivery systems for the distribution of various types of information and media.

¹ In the Matter of Telecommunications Services Inside Wiring, Customer Premises Equipment, CS Docket No. 95-184, Notice of Proposed Rulemaking, FCC 95-504, rel. Jan. 26, 1996 ("NPRM").

In this proceeding, the Commission is proposing to revise its current rules concerning the installation and use of inside wiring, for both telephone and video delivery systems. U S WEST has significant experience (through both its in-region telephone company, U S WEST Communications, Inc. and its out-of-region cable company, MediaOne, Inc. (“MediaOne”) in Atlanta) with respect to the design and construction of communications networks, including hybrid networks designed to carry voice, data, and video. This experience of operating both cable and telephone networks provides U S WEST with the unique ability to provide the Commission with views on the multitude of issues contained in the NPRM which balance the interests of both cable and telephone providers.

I. INTRODUCTION AND SUMMARY

The Commission acknowledges that the current rules concerning cable and telephone inside wire “were developed in separate proceedings at a time when telephone companies typically provided only telephone service over ‘twisted pair’ copper wiring, and cable operators typically provided only video programming services over coaxial cable.”² It goes on to note that “[t]hese seemingly simple dichotomies, however, are dissolving as technology advances and the marketplace changes . . . telephone companies and cable operators have begun to enter each other’s businesses.”³

² Id. ¶ 2.

³ Id.

The Commission thus recognizes that it must revise its inside wiring rules to account for this “new world” of combined telephony and multimedia. It is imperative that the Commission do so in a fair and equitable manner. To do otherwise will provide one competitor or another with an unfair advantage in the marketplace. Neither industry needs nor deserves such an advantage going-forward.

The Commission should develop uniform rules for the treatment of inside wire based on the technical characteristics of the different types of delivery systems (e.g., fiber, coax, or twisted pair), regardless of the type of service they carry (e.g., video programming, telephony, or data). In this way, the Commission can ensure that its inside wire rules will encourage fair and open competition by treating all providers equally and also provide adequate safeguards against signal leakage and other potentially harmful by-products of incorrectly installed delivery systems.

II. SPECIFIC INSIDE WIRING ISSUES

A. The Commission Should Establish A Single Demarcation Point for Single Family Residences, Multiple Dwelling Units, and Commercial Buildings -- Demarcation Points Must Be More Flexible Based Upon Existing Wiring Configurations or the Specific Requirements of New Building Installations

The Commission first requests comment on the point of demarcation, i.e., where the provider’s network ends and a subscriber’s wiring begins, for various types of service and customer premises. The Commission asks if a common demarcation point is legally permissible and/or technically feasible. As is the normal case for complex issues, the answer depends on the particular facts involved. In the case

of single family residences and single line businesses (collectively “single line applications”), where only one or a limited number of customers are served at a given location, a common point of demarcation is seemingly both legally permissible and technically feasible. It may also be the most logical, given the melding of technologies taking place. The Commission has previously established single family residence demarcation points for both telephony and cable wiring.⁴ There is apparently no reason why it could not establish a common point of demarcation for both services in the case of single line applications.

For multiple dwelling units (“MDU”) and commercial buildings, a common demarcation point may not be technically feasible depending upon individual wiring configurations. The Commission should attempt to standardize the rules wherever possible and to the extent legally permissible.

1. A Common Demarcation Point for Video and Telephony Service is Appropriate for Single Line Applications Where Feasible

U S WEST recommends that the Commission establish a common demarcation point for video and telephony services for single line applications on the outside of the dwelling/structure at an appropriate location for grounding and wiring purposes. Mutual access to the demarcation point should be available to all service

⁴ For telephony, see In the Matter of Review of Sections 68.104 and 68.213 of the Commission’s Rules Concerning Connection of Simple Inside Wiring to the Telephone Network and Petition for Modification of Section 68.213 of the Commission’s Rules filed by the Electronic Industries Association, Report and Order and Further Notice of Proposed Rule Making, 5 FCC Rcd. 4686, 4692 ¶ 29 (1990); for cable, see In the Matter of Implementation of the Cable Television Consumer Protection and Competition Act of 1992, Cable Home Wiring, Report and Order, 8 FCC Rcd. 1435, 1437 ¶ 11 (1993).

providers to the extent necessary to provide service to an individual customer or to service common network elements. The demarcation point should be established by the initial service provider at a location which is suitable for common service entry. If a demarcation point for one type of service (e.g., telephone) has already been established, then, to the extent possible, other services should be placed as close as practicable to the existing demarcation point for the established service. To the extent that a particular installation requires multiple penetrations on a residence to provide service to various locations in the residence, the demarcation point should be at a point before the service is split to minimize the need to place multiple wires on the outside of subscribers' houses. In the special circumstance where two providers have been requested to provide the same service, the demarcation point should be shared if possible. If sharing is not feasible, a new demarcation point should be established by the second provider as close as practicable to the first.

The Commission should establish a policy which would allow residential or small business customers to have full access, including repair and modification, to their inside wire for both telephony and cable applications, regardless of the ownership status of the existing wire.⁵ In this way, the ownership rights of providers to previously installed wiring are not abridged, and homeowners or small business operators who wish to make modifications to existing inside wiring will be able to do so without concern over a service provider's claim of ownership. Going-forward, the

⁵ The Commission has previously established this ability for telephone inside wire, see In the Matter of Detariffing the Installation and Maintenance of Inside Wiring, Second Report and Order, 51 Fed. Reg. 8498 (1986), on recon., 1 FCC Rcd. 1190, 1195 (1986).

Commission should establish a policy that all newly-installed residential or small business (simple) wiring, whether for telephony or video, belongs to the customer after installation. Companies would be free to recover installation costs up-front or through extended periodic payment options. This would ensure the future access to inside wiring by customers and competitive providers to the extent that they are able to use the existing wiring to provide service.

2. Demarcation Points for Commercial Buildings and Multiple Dwelling Units Must Have Additional Flexibility

Demarcation points for commercial buildings and MDUs, however provided, need to have much greater flexibility due to the variety of building designs, the varying locations of utility closets, wiring configurations/technology already in-place, and a host of other issues, not the least of which is individual building owner/manager needs or requirements. For existing structures, demarcation points for both telephony and cable are most likely already established by prior installations. It would make little sense both from a practical standpoint and economically to change the demarcation points for existing buildings. The best the Commission can do in existing cases is to ensure that all providers have access to the demarcation points, or where direct access might provide competitively sensitive customer service information, access to specially constructed interface or cross-connect systems which would provide an equal level of access to customers at each location.

For existing facilities, the ownership of the existing wire, both cable and telephony, should be grandfathered. If other providers require its use to deliver

service, the owner of the existing wire should be fairly compensated for its use through leasing arrangements or other similar agreements. This type of facilities use agreement for local exchange carrier (“LEC”) networks is certainly contemplated by the newly enacted Telecommunications Act of 1996.⁶ The Act specifically mandates access, on a nondiscriminatory basis, to the network elements of an incumbent LEC at any technically feasible point on rates, terms, and conditions that are just, reasonable, and nondiscriminatory.⁷ Existing inside building wire, to the extent owned by a LEC and part of a LEC’s network, is undoubtedly a network element subject to the Act’s provisions. Deregulated wire is not, of course, a potential network element. The Act, however, does not require a carrier to relinquish ownership of network elements. Ownership retention of internal building wiring is important to minimize the costs for all providers of last resort to provide ubiquitous service. Should a provider of last resort be forced to sell or abandon such existing wiring, it could later be forced to re-cable or re-wire an entire building at some point in the future if service commitments to tenants were abandoned or discontinued by the building owner or another service provider.

For new construction, the Commission should consider a plan which would provide a building owner with general options for demarcation based upon the network technology being deployed and the individual building owner’s needs. As the current engineering and design specifications for telephony and video networks are

⁶ Telecommunications Act of 1996, Pub. L. No. 104-104, 110 Stat. 56 (1996) (“Act”).

⁷ Id. Stat. at 62-63 § 251(c)(2) & (3).

different, the options provided must have a basis in the technical characteristics of the network being installed. As technology changes, the Commission must be flexible in adapting its requirements to conform to newly adopted technical standards.⁸

For new twisted pair/telephony network installations, U S WEST proposes that the Commission require that demarcation options, based upon technical feasibility associated with a particular installation, be provided to building owners at the time service is requested. This would provide building owners with the flexibility and control necessary to make choices for their specific location. Several options, subject to individual building circumstances, are likely to be available for telephony demarcation.

Due to the current state of video/cable service delivery technology, the demarcation options for new installations of coax/cable networks are currently more limited. The short run-length requirements for video delivery make single points of demarcation technically impossible. Multiple demarcation points are necessary to ensure an appropriate level of signal delivery and service quality. As such, a method of installation which includes multiple demarcation points is the only technologically feasible option for new cable installations. Where possible, the Commission should recommend that telephone and cable demarcation points should be

⁸ For example, the Video Electronic Standards Association ("VESA") is currently considering a standard for wiring which allows for the simultaneous delivery of video and telephony. The Commission must be able to quickly conform its rules to such standards as they are adopted by recognized industry standards organizations.

co-located for ease of access and connectivity. This demarcation positioning becomes more significant in the near future due to the strong possibility that telephony and video will be delivered together via a single wire.

To the extent that building owners chose an option where they would install and maintain the wiring inside their locations, the Commission should require that such installations conform to Commission technical specifications based upon current industry wiring standards. In telephony, U S WEST has experienced numerous situations where inside wiring previously installed by building owners or their subcontractors could not be utilized due to the use of substandard materials or faulty installation techniques. In cable, MediaOne has had similar experiences with installation by home builders and electricians of coax wiring which did not meet the required standards for signal leakage. Requiring that all installed wiring conform to minimum standards would protect both property owners and service providers from incurring the costs of replacing deficient wiring.

In recent years, the number of building owners installing and maintaining their own internal communications wiring and controlling the access to that wiring has increased. As a result, many building tenants have lost the option to choose their own telecommunications and video programming service providers. This trend, should it continue, may be contrary to the Commission's goals for open competition and consumers being able to choose from amongst multiple service providers. By limiting access through exclusive contracts and the like, building owners are in fact choosing the service providers for their tenants. The Commission should

study the implications and public policy impacts of such exclusive contracts and determine if further action is necessary or warranted to remedy any negative findings.

- B. Technical Connection Standards Should Be Adopted By the Commission for Both Telephony and Cable -- The Standards Adopted, However, Should Be Developed by Industry Organizations With Substantial Expertise -- Standards Should Be Flexible and Dynamic to Respond to Changing Conditions in Technology and the Marketplace

As noted by the Commission, standards currently exist for connections employed in the delivery of telephone service under Part 68 of the Commission's rules. Cable wiring, on the other hand, is not required to conform to any existing standards under the Commission's rules. All cable systems that U S WEST is aware of use F-type connectors for attachment to the network. It is U S WEST's understanding that these are the de facto standard in the cable industry. The Commission should establish similar rules for both telephone and cable connectors, based on the specific technology of each, so that interconnectors and end users will be able to easily modify or connect to existing wiring. The standards adopted should come from industry standards organizations whose expertise in these areas is well recognized by all parties.⁹ The rules adopted must be flexible enough to allow for change corresponding to the rapid development of technology in the areas of telephony and multimedia.

⁹ For cable this industry group would be the Society of Cable Television Engineers ("SCTE"). For telephone, the industry standards organization has historically been ATIS, the Telephone Industry Association ("TIA"), and EIA. Wiring specifications for low-voltage wiring are also contained in the National Electric Code ("NEC"), however, the specifications included therein are not sufficiently detailed to provide meaningful standards.

Both industries have significant concerns with regard to poor network connections. Concerns shared by cable and telephony are harm to the network and the theft of service; cable has the additional important issue of signal leakage. Thus, it is important that these networks and the networks of the future be protected by a minimum set of standards to which manufacturers of connectors and customer premise equipment (or “CPE”) are required to conform. It is also important to have standards in place for reference by third-party installers. In the telephone environment, a variety of competitors are currently installing inside wiring in new homes and offices. It is important for network protection that these installations be performed to some standard level to ensure network integrity. As the Commission is currently reviewing the issue of cable inside wiring and CPE (i.e., end users owning their converters and other previously supplied cable equipment), the time is ripe for the development of connectivity standards for that industry. All network providers, regardless of the type of service they provide, have the need to protect the integrity of their networks.

C. **The Commission Should Retain the Existing Simple and Complex Wiring Categories**

The Commission should retain the existing categories of simple and complex inside telephone wiring. It is important that end users and third-party providers understand these classifications. Residential and single-line business wiring should remain simple and continue to be unregulated. Non-residential complex wiring should remain regulated to the extent required to provide equal access to all wiring

providers, to meet the technical parameters of the telephone network, and to ensure protection of all provider networks. Wiring used to provide dedicated service to one customer (e.g., private line high capacity DS1 and DS3 services) should be exempted from demarcation requirements and building access/ownership restrictions and allowed to terminate in individual tenant premises as requested by the customer. Similar categories for wiring should be developed with regard to cable inside wiring as applicable to the technology used.

D. Simple Inside Wiring Should Be Treated the Same for
Telephony and Cable; Residential and Single Line Business
Subscribers Should Be Able to Freely Modify Existing Wiring

The treatment of simple inside wiring for single-line applications should be consistent for cable and telephony. Residential and single-line business customers should ultimately own and have complete access to the wiring in their homes. The single-line business distinction made in telephony -- serving to differentiate simple from complex wiring -- is also applicable to cable to the extent that only one wire is required to provide service at a small business operator's location. A simple set of restrictions should apply for both services: 1) a subscriber may not introduce harm into the network; 2) a subscriber may not make modifications to their wiring which would harm other radio-based transmissions (e.g., signal leakage); and 3) a subscriber may not make modifications to their wiring for the purpose of theft of service. The penalty for all types of harm would be disconnection from the network until such time as the subscriber has effected repairs sufficient to eliminate the

problem.¹⁰ Providers should be allowed to recover their costs associated with disconnection and reconnection in cases where one of the above restrictions has been violated.

Both cable companies and telephone companies should be allowed to offer inside wire maintenance plans to subscribers. Both cable and telephone companies should be allowed to service and repair all subscriber inside wiring. This would provide for a more open and robust market for inside wire installation, repair, and maintenance and would give residential subscribers free choice in choosing their wiring service provider.

E. The Commission Should Work Toward Encouraging the Establishment of Standards for All Customer Premises Equipment

Generally, the Commission should direct work to appropriate standards organizations for CPE on both the telephony side and the cable side of the marketplace. The Commission should focus its efforts on the issues of: 1) network security; 2) system compatibility; 3) connectivity without signal leakage or other harmful by-products; and 4) theft of service prevention. The primary purpose of the rules should be the protection of the respective provider networks while giving maximum freedom for competition and subscriber choice.

U S WEST would specifically request that the Commission direct the development of a standard for an external component which would attach to a customer's

¹⁰ This remedy is currently available for telephony providers in the Commission's Rules, see 47 CFR § 68.108.

existing video equipment (television, VCR, etc.) and have the capability for all required scrambling and decoding. Because of the large amount of existing electronic equipment with significant remaining service life, U S WEST believes that the development of an external interface component preserves a consumer's ability to use their existing equipment without modification or replacement.

Secondly, since there are so many proprietary methods for video decoding and scrambling, an external interface unit would allow cable operators to protect their system scrambling security and would not require each operator to re-fit all existing descrambling equipment.

III. CONCLUSION


The Commission must revise its existing inside wiring rules to account for the melding of telephony and multimedia delivery technologies, while at the same time not impeding future development in this area by imposing additional and unnecessary regulatory restrictions. It is important that the Commission develop uniform and equal rules for the treatment of inside wire based on the technical characteristics of the different types of delivery systems as opposed to the type of service they carry. It is also important that the Commission ensure that its rules are able to keep pace with the rapidly changing standards in these areas. By implementing U S WEST's proposals herein, the Commission can ensure that its inside wire rules will encourage fair and open competition by treating all providers equally and also provide adequate safeguards against any potentially harmful side-

effects of deficient inside wire installations. The Commission should move to adopt such modifications for the benefit of multimedia and telecommunications subscribers and providers alike.

Respectfully submitted,

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March 18, 1996

CERTIFICATE OF SERVICE

I, Kelseau Powe, Jr., do hereby certify that on this 18th day of March, 1996, I have caused a copy of the foregoing **COMMENTS OF U S WEST, INC.** to be served via hand-delivery upon the persons listed on the attached service list.



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